CLAIMS

1. A method for determining whether a test compound binds to a target RNA, the method comprising the steps of:

(a) contacting said test compound with said target RNA and a RNA-modifying enzyme; and

(b) detecting the modification of said target RNA by said enzyme and comparing the amount of modification detected to that of a standard, wherein said comparing determines whether said test compound binds to said target RNA.

2. The method of claim 1, wherein said target RNA comprises a rRNA or a fragment or sub-region thereof.

3. The method of claim 1 wherein said target RNA comprises a whole ribosome.

4. The method of claim 1 wherein said target RNA is a ribosome fragment or sub-region thereof.

5. The method of claim 1, wherein said target RNA includes a stabilising structure.

6. The method of claim 1, wherein said target RNA comprises a chemical modification which enhances the stability of said target RNA.

7. The method of claim 1, wherein said RNA-modifying enzyme is selected from the group consisting of a methyltransferase, a pseudouridine synthase, a guanine glycosylase, a G37-N1-methylguanosine-tRNA-methyltransferase, and a 2'-O-ribosyl phosphate transferase.

8. The method of claim 7, wherein said methytransferase is the thiostrepton resistance methyltransferase or the erythromycin resistance methyltransferase.

9. The method of claim 7, wherein target RNA modification is detected by the incorporation of an isotopic label from S-adenosyl-methionine into said target RNA.

10. The method of claim 8, wherein target RNA modification is detected by the incorporation of an isotopic label from S-adenosyl-methionine into said target RNA.

11. The method of claim 1, wherein said test compound is selected from the group consisting of a peptide, a peptoid, a protein, a lipid, a metal, a nucleotide, a nucleoside, a small organic molecule, and a polyamine.

12. The method of claim 1, wherein said test compound is selected from a combinatorial library.

13. The method of claim 1, in a high-throughput screening format.

14. A compound with antibiotic activity that binds to a target RNA, said compound identified by

(a) contacting a test compound with said target RNA and a RNA-modifying enzyme; and

(b) detecting the modification of said target RNA by said enzyme and comparing the amount of modification detected to that of a standard, wherein reduced modification of said target RNA in the presence of said test compound identifies said test compound as a compound with antibiotic activity.

15. A kit for determining whether a test compound binds to a target RNA, said kit comprising said target RNA and a RNA-modifying enzyme.

16. A method for determining whether a test compound binds to a target RNA, said method comprising the steps of:

(a) contacting said test compound with a RNA-modifying enzyme and said target RNA, wherein said target RNA comprises a suicide substrate for said enzyme; and

(b) detecting the modification of the enzyme by said suicide substrate, wherein said detecting determines whether said test compound binds to said target RNA.